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Proposed Maximum Residue Limit PMRL2016-37

Hexythiazox

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Under the authority of the *Pest Control Products Act*, Health Canada's Pest Management Regulatory Agency (PMRA) is proposing to establish maximum residue limits (MRLs) for hexythiazox on various commodities to permit the import and sale of foods containing such residues.

Hexythiazox is an acaricide and miticide not currently registered for use in Canada.

The PMRA must determine the quantity of residues that are likely to remain in or on the imported food commodities when hexythiazox is used according to label directions in the exporting country, and that such residues will not be a concern to human health. This quantity is then legally established as an MRL on the corresponding imported commodity. An MRL applies to the identified raw agricultural food commodity as well as to any processed food product that contains it, except where separate MRLs are specified for the raw agricultural commodity and a processed product made from it.

Consultation on the proposed MRLs for hexythiazox is being conducted via this document (see Next Steps, the last section of this document). A summary of the field trial data used to support the proposed MRLs can be found in Appendix I.

To comply with Canada's international trade obligations, consultation on the proposed MRLs are also being conducted internationally by notifying the World Trade Organization, as coordinated by Canada's Notification Authority and Enquiry Point.

The proposed MRLs for hexythiazox are as follows.

Table 1 Proposed Maximum Residue Limits for Hexythiazox

Common Name	Residue Definition	MRL (ppm)[1]	Food Commodity
Hexythiazox	(4*R*,5*R*)-*rel*-5-(4-chlorophenyl)-*N*-cyclohexyl-4-methyl-2-oxo-3-thiazolidinecarboxamide	24	Citrus oil
		9.0	Hops (dried)
		6.0	Low growing berries (CSG 13-07G)
		3.0	Sorghum
		2.0	Dates; dried prune plums; peppermint tops; spearmint tops
		1.5	Caneberries (CSG 13-07A)
		1.0	Small fruits vine climbing, except fuzzy kiwifruit (CSG 13-07F); stone fruits (CG 12)
		0.9	Citrus peel
		0.5	Citrus fruits (CG 10); tomatoes

Common Name	Residue Definition	MRL (ppm)[1]	Food Commodity
		0.4	Pome fruits (CG 11-09); dry adzuki beans; dry beans; dry blackeyed peas; dry broad beans; dry chickpeas; dry cowpea seeds, dry guar seeds; dry kidney beans; dry lablab beans; dry lima beans; dry moth beans; dry mung beans; dry navy beans; dry pink beans; dry pinto beans; dry rice beans; dry southern peas; dry tepary beans; dry urd beans; grain lupin
		0.09	Succulent shelled blackeyed peas; succulent shelled broad beans; succulent shelled cowpeas; succulent shelled lima beans; succulent shelled southern peas
		0.06	Corn oil (refined)
		0.04	Sweet corn kernels plus cob with husks removed
		0.03	Field corn flour
		0.02	Field corn; potatoes; tree nuts (CG 14; including pistachios)

[1] ppm = parts per million

MRLs are proposed for each commodity included in the listed crop groupings in accordance with the Residue Chemistry Crop Groups webpage in the Pesticides and Pest Management section of Health Canada's website.

MRLs established in Canada may be found using the Maximum Residue Limit Database on the Maximum Residue Limits for Pesticides webpage. The database allows users to search for established MRLs, regulated under the *Pest Control Products Act*, both for pesticides or for food commodities.

International Situation and Trade Implications

Table 2 compares the MRLs proposed for hexythiazox in Canada with corresponding American tolerances and Codex MRLs.[1] American tolerances are listed in the Electronic Code of Federal Regulations, 40 CFR Part 180, by pesticide. A listing of established Codex MRLs is available on the Codex Alimentarius Pesticide Residues in Food website, by pesticide or commodity.

[1] The Codex Alimentarius Commission is an international organization under the auspices of the United Nations that develops international food standards, including MRLs.

Table 2 Comparison of Canadian MRLs, American Tolerances and Codex MRLs (where different)

Food Commodity	Canadian MRL (ppm)	American Tolerance (ppm)	Codex MRL (ppm)
Potatoes	0.02	0.02	Not Established
Succulent shelled cultivars of beans (*Phaseolus* spp.)	0.09	0.3 (bean, succulent)	Not Established
Dried cultivars of beans (*Phaseolus* spp.)	0.4	0.4 (bean, dried seed)	Not Established
Tomatoes	0.5	0.5	0.1
Citrus fruits (CG 10)	0.5	0.35	0.5
Citrus oil	24	24	Not Established
Citrus peel	0.9	Not Established	Not Established
Stone fruits (CG 12)	1.0	1.0	0.3
Dried prune plums	2.0	1.3	1.0
Small fruits vine climbing, except fuzzy kiwifruit (CSG 13-07F)	1.0	1.0	1.0 (grapes)
Low growing berries (CSG 13-07G)	6.0	6.0	6.0 (strawberry)
Caneberries (CSG 13-07A)	1.5	1.0	Not Established
Tree nuts (CG 14; including pistachios)	0.02	0.30	0.05
Sweet corn kernels plus cob with husks removed	0.04	0.1	Not Established

Food Commodity	Canadian MRL (ppm)	American Tolerance (ppm)	Codex MRL (ppm)
Field corn	0.02	0.02 (corn, field, grain)	Not Established
Corn oil (refined)	0.06	Not Established	Not Established
Field corn flour	0.03	Not Established	Not Established
Sorghum	3.0	3.0 (sorghum, grain, grain)	Not Established
Dates	2.0	1.0	2.0
Hops (dried)	9.0	2.0	3.0
Spearmint tops	2.0	2.0	Not Established
Peppermint tops	2.0	2.0	Not Established

Next Steps

The PMRA invites the public to submit written comments on the proposed MRLs for hexythiazox up to 75 days from the date of publication of this document. Please forward your comments to Publications (see the contact information on the cover page of this document). The PMRA will consider all comments received before making a final decision on the proposed MRLs. Comments received will be addressed in a separate document linked to this PMRL. The established MRLs will be legally in effect as of the date that they are entered into the Maximum Residue Limit Database.

Appendix I

Summary of Field Trial Data Used to Support the Proposed Maximum Residue Limits

Residue data for hexythiazox in potatoes; succulent shelled lima beans; dry beans; greenhouse tomatoes; oranges; lemons; grapefruits; apples; pears; peaches; nectarines; cherries; plums; raspberries and blackberries; grapes; strawberries; almonds; pecans; sweet corn kernel plus cob with husks removed (K+CWHR); field corn; sorghum; dates; hops (dried); spearmint and peppermint tops were submitted to support the maximum residue limits on imported potatoes; succulent shelled lima beans; dry beans; tomatoes; citrus fruits (crop group 10); stone fruits (crop group 12); caneberries (crop subgroup 13-07A); small fruits vine climbing, except fuzzy kiwifruit (crop subgroup 13-07F); low growing berries (crop subgroup 13-07G); tree nuts (crop group 14); pistachios; sweet corn K+CWHR; field corn; sorghum; dates; hops (dried); spearmint tops; peppermint tops. In addition, processing studies in treated apple, field corn, grapes, mint, orange and plum were reviewed to determine the potential for concentration of residues of hexythiazox into processed commodities.

Maximum Residue Limits

The recommendation for maximum residue limits (MRLs) for hexythiazox was based upon the residues observed in crop commodities treated according to label directions or to exaggerated rates in the exporting country, and the guidance provided in the OECD MRL Calculator. Table A1 summarizes the residue data used to calculate the proposed MRLs for imported potatoes, succulent shelled lima beans, dry beans, tomatoes, citrus fruits (crop group 10), stone fruits (crop group 12), caneberries (crop subgroup 13-07A), small fruits vine climbing except fuzzy kiwifruit (crop subgroup 13-07F), low growing berries (crop subgroup 13-07G), tree nuts (crop group 14), pistachios, sweet corn K+CWHR, field corn, sorghum, dates; hops (dried), spearmint tops, and peppermint tops.

Table A1 Summary of Field Trial and Processing Data Used to Support MRLs

Commodity	Application Method/Total Application Rate (g ai/ha)[1]	Preharvest Interval (days)	Lowest Average Field Trial Residues (ppm)	Highest Average Field Trial Residues (ppm)	Experimental Processing Factor
Potatoes	Broadcast foliar/ 201-217	21-22	<0.02	<0.02	None
Succulent shelled lima beans	Broadcast foliar/ 206-213	14	<0.02	0.046	None
Dry beans	Broadcast foliar/ 206-213	14	<0.02	0.309	None
Tomatoes (greenhouse)	Broadcast foliar/ 205-219	1	0.020	0.342	None

Commodity	Application Method/Total Application Rate (g ai/ha)[1]	Preharvest Interval (days)	Lowest Average Field Trial Residues (ppm)	Highest Average Field Trial Residues (ppm)	Experimental Processing Factor
Lemons	Broadcast foliar/ 208-211	27-28	0.056	0.226	None
Grapefruits	Broadcast foliar/ 205-211	28	<0.05	0.092	None
Oranges	Broadcast foliar/ 209-213	28	<0.05	0.125	104 (oil) 3.6 (peel) 0.06-0.17 (juice) 0.12 (marmalade) 0.04 (canned)
Apples	Foliar airblast/ 205-218	27-28	0.036	0.226	0.29 (purée) 0.19 (juice) 0.04 (canned)
Pears	Foliar airblast/ 206-213	27-28	0.048	0.142	None
Cherries (sweet, tart)	Foliar airblast/ 209-217	7	0.338	0.711	None
Peaches	Foliar airblast/ 203-213	7	0.060	0.479	None
Plums	Foliar airblast/ 203-212	7	0.025	0.356	4.9 (dried prune plum)
Grapes	Foliar airblast/ 209-211	7	0.068	0.651	1.2 (raisins) 0.06 (juice) 0.03 (wine)
Strawberries	Foliar/209-213	3	0.12	3.8	None
Raspberries, blackberries	Foliar/210	3	0.32	0.88	None
Pecan nutmeat	Foliar airblast/ 206-214	6-7	<0.02	<0.02	None
Almond nutmeat	Foliar airblast/ 205-213	7	<0.02	<0.02	None
Sweet corn K+CWHR	Foliar/209-212	28	<0.02	0.022	None

Commodity	Application Method/Total Application Rate (g ai/ha)[1]	Preharvest Interval (days)	Lowest Average Field Trial Residues (ppm)	Highest Average Field Trial Residues (ppm)	Experimental Processing Factor
Field corn	Foliar/205-217	28-31	<0.02	1.37	2.7-2.8 (refined oil) 1.5 (flour) 1.0 (grits, meal, starch)
Sorghum	Foliar/204-217	28-32	0.636	1.69	None
Dates	Foliar airblast/ 210-214	91	0.10	0.47	None
Hops (dried)	Foliar airblast /273-286	44-45	0.348	3.70	None
Peppermint tops, spearmint tops	Broadcast foliar /175	28-32	0.12	1.7	0.36 (oil)

[1] g ai/ha = grams of active ingredient per hectare

Following the review of all available data, MRLs as proposed in Table 1 are recommended to cover residues of hexythiazox. Residues of hexythiazox in these imported crop commodities at the proposed MRLs will not pose an unacceptable risk to any segment of the population, including infants, children, adults and seniors.